

Appln No.: 10/065,545
Amendment Dated: March 24, 2004
Reply to Office Action of January 21, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for making a flame-retarded polycarbonate resin comprising the step of adding to a high melt strength polycarbonate resin an effective flame-retardant amount of a combination of a potassium salt of a perfluoroalkane sulfonate and a sodium salt of toluene sulfonic acid in a ratio which provides synergistic effectiveness as a flame-retardant additive.
2. (original) The method of claim 1, wherein the high melt strength polycarbonate resin comprises an antidrip agent.
3. (original) The method of claim 2, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.
4. (original) The method of claim 3, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.
5. (original) The method of claim 4, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.
6. (original) The method of claim 3, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.
7. (original) The method of claim 6, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

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8. (original) The method of claim 2, wherein the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

9. (original) The method of claim 8, wherein the sodium toluene sulfonic acid is added in an amount of from 0.005 to 0.1 weight %.

10. (original) The method of claim 9, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

11. (original) The method of claim 10, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

12. (original) The method of claim 11, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

13. (original) The method of claim 10, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

14. (original) The method of claim 13, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

15. (original) The method of claim 2, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are added together as a flame-retardant composition.

16. (original) The method of claim 15, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

17. (original) The method of claim 16, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

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18. (original) The method of claim 17, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

19. (original) The method of claim 16, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

20. (original) The method of claim 19, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

21. (original) The method of claim 15, wherein the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

22. (original) The method of claim 21, wherein the sodium toluene sulfonic acid is added in an amount of from 0.005 to 0.1 weight %.

23. (original) The method of claim 22, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

24. (original) The method of claim 23, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

25. (original) The method of claim 24, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

26. (original) The method of claim 23, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

27. (original) The method of claim 26, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

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28. (original) The method of claim 15, wherein the flame-retardant composition comprises the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid in an aqueous carrier.

29. (original) The method of claim 28, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

30. (original) The method of claim 27, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

31. (original) The method of claim 30, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

32. (original) The method of claim 29, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

33. (original) The method of claim 32, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

34. (original) The method of claim 28, wherein the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

35. (original) The method of claim 34, wherein the sodium toluene sulfonic acid is added in an amount of from 0.005 to 0.1 weight %.

36. (original) The method of claim 35, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

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37. (original) The method of claim 36, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

38. (currently amended) A composition comprising a high melt strength polycarbonate resin and an effective flame-retardant amount of a potassium salt of a perfluoroalkane sulfonate and a sodium salt of toluene sulfonic acid in a ratio which provides synergistic effectiveness as a flame-retardant additive.

39. (original) The composition of claim 38, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

40. (original) The composition of claim 39, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

41. (original) The composition of claim 40, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

42. (original) The composition of claim 39, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

43. (original) The composition of claim 42, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

44. (original) The composition of claim 38, wherein the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

45. (original) The composition of claim 44, wherein the sodium toluene sulfonic acid is added in an amount of from 0.005 to 0.05 weight %.

46. (original) The composition of claim 45, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

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47. (original) The composition of claim 46, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

48. (original) The composition of claim 47, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

49. (original) The composition of claim 48, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

50. (original) The composition of claim 49, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

51. (original) The composition of claim 45, wherein the potassium salt of a perfluoroalkane sulfonate comprises a 1 to 4 carbon alkane group.

52. (original) The composition of claim 51, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

53. (original) The composition of claim 52, wherein the potassium perfluorobutane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

54. (original) The composition of claim 51, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

55. (original) The composition of claim 54, wherein the potassium trifluoromethane sulfonate is added to the polycarbonate resin in an amount of from 0.005 to 0.05 weight %.

56. (original) The composition of claim 38, further comprising an antidrip agent.

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57. (original) A fire-retardant additive comprising a potassium salt of a perfluoroalkane sulfonate and a sodium salt of toluene sulfonic acid in a ratio which provides synergistic effectiveness as a flame-retardant additive for high melt strength polycarbonate.

58. (original) The additive of claim 57, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.1 to 2.0 by weight.

59. (original) The additive of claim 58, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.18 to 1.8 by weight.

60. (original) The additive of claim 57, wherein the potassium salt of a perfluoroalkane sulfonate has a 1 to 4 carbon alkane group.

61. (original) The additive of claim 60, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

62. (original) The additive of claim 60, wherein the potassium salt of a perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

63. (original) The additive of claim 57, wherein the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

64. (original) The additive of claim 63, wherein the potassium salt of a perfluoroalkane sulfonate has a 1 to 4 carbon alkane group.

65. (original) The additive of claim 64, wherein the potassium salt of perfluoroalkane sulfonate is potassium perfluorobutane sulfonate.

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66. (original) The additive of claim 65, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.1 to 2.0 by weight.

67. (original) The additive of claim 65, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.18 to 1.8 by weight.

68. (original) The additive of claim 64, wherein the potassium salt of perfluoroalkane sulfonate is potassium trifluoromethane sulfonate.

69. (original) The additive of claim 68, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.1 to 2.0 by weight.

70. (original) The additive of claim 68, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.18 to 1.8 by weight.

71. (original) The additive of claim 57, wherein the additive comprises the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid in an aqueous carrier.

72. (original) The additive of claim 71, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.1 to 2.0 by weight.

73. (original) The additive of claim 71, wherein the potassium salt of a perfluoroalkane sulfonate and the sodium salt of toluene sulfonic acid are present in a ratio of from about 0.18 to 1.8 by weight.

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74. (original) The additive of claim 71, wherein the potassium salt of a perfluoroalkane sulfonate is potassium perfluorobutane sulfonate and the sodium salt of toluene sulfonic acid is sodium toluene sulfonic acid.

75. (original) The additive of claim 57, further comprising an antidrip agent.